Patrick Bayou Superfund Site Remedial Investigation/Focused Feasibility Study - Deer Park, Texas Regulatory Comments on: Surface Sediment Contaminant of Potential Concern (COPC) Delineation and Surface Water Sampling and Analysis Plan	
Comments from:	**Comment**
Joe Bell, VCP/CA Section, Remediation Division Vickie Reat, Quality Assurance/Technical Support/IT & Special Projects Section, Remediation Division October 8, 2009	4.1 Experimental Design - Surface Sediments - A 0 - 10 centimeter sampling depth interval is proposed and is believed to be conservative based on the analysis of the Mixing Zone Evaluation Work Plan data. As stated in my July 15,2009 memo (regarding the Patrick Bayou Sediment Mixing-Zone Layer Study), I am generally not opposed to this approach as it appears to be conservative, particularly where the biotic zone extends to depths less than 10 centimeters. Where the various Patrick Bayou sediment studies indicate locations of scour rather than deposition, the JDG should address this in the uncertainty discussion of the forthcoming risk assessment, particularly where historical data indicates elevated COPC concentrations at depths just below the top 10 centimeters. Response: Noted for the forthcoming risk assessment
Joe Bell, VCP/CA Section, Remediation Division Vickie Reat, Quality Assurance/Technical Support/IT & Special Projects Section, Remediation Division October 8, 2009	4.2.1 Sample Locations, Frequency, and intervals - The discussion indicates that surface water will be collected at 6 locations and that these locations were chosen to characterize water from outside sources, including the Houston Ship Channel, outfalls from OxyVinyls, the East Fork Tributary, and upstream water (i.e. south of State Highway 225). Looking at Figure 3, proposed station PB059 presumably is intended to represent the influence of the East Fork Tributary. Since this station is in Patrick Bayou itself, I suggest that the JDG also propose to collect surface water from the East Fork Tributary, if it is flowing. Response: To provide adequate information for both the Site water quality and water quality in the East Fork, an additional surface water station will be placed in the East Fork approximately 600 ft upstream of confluence with Patrick Bayou. In addition to the supplemental station in the East Fork, the JDG will also provide an additional surface water sampling location upstream of the influence of the City of Deer Park Waste Water Treatment Plant outfall if adequate flow is present at the time of sampling.
Joe Bell, VCP/CA Section, Remediation Division Vickie Reat, Quality Assurance/Technical Support/IT & Special Projects Section, Remediation Division	4.2.1 Sample Locations, Frequency, and Intervals - Related to comment 3, the JDG should explain the rationale for proposing only six surface water sample locations. There is some concern that the limited number of locations would not be adequate to properly characterize each segment. This comment is offered as a suggestion that more samples might be warranted to avoid remobilization or delays due to insufficient surface water

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October 8, 2009	data. Response: The primary purpose of the surface water sampling is to collect adequate surface water data to identify COPC. It is expected that eight locations currently proposed (see response to Joe Bell comment above), sampled at two depths (N = 16) should be adequate for this purpose given the size of the site. Results of this sampling event will be evaluated to determine if additional samples would be necessary for the risk assessment and will be used to focus any subsequent investigations.
Joe Bell, VCP/CA Section, Remediation Division Vickie Reat, Quality Assurance/Technical Support/IT & Special Projects Section, Remediation Division October 8, 2009	4.2.2 Target Analyte List - The discussion indicates that filtered water will be collected for the analysis of dissolved metals, as TCEQ and USEPA criteria that will be used in COPC screening are based on dissolved fractions. Selenium and mercury are specifically indicated as analytes (Table 5) for surface water. Both the aquatic life and human health Texas Surface Water Quality Standards for these metals are for the total form. Response: The current SAP includes both total and dissolved fractions for mercury and selenium (see Table 5).
Joe Bell, VCP/CA Section, Remediation Division Vickie Reat, Quality Assurance/Technical Support/IT & Special Projects Section, Remediation Division October 8, 2009	5.0 Laboratory Analytical Methods, Quality Control, and Measurement Quality Objectives - Table 5 displays the analytical methods, target practical quantitation limits (PQL), and analytical concentration goals for surface water samples. The goal for total mercury is 1.1 ug/L. This is appropriate as it is the chronic aquatic life marine standard. As an aside, if this data will be used to support the human health evaluation, the human health standard (marine, fish only) is 0.025 ug/L total mercury. Response: The feasibility of meeting the human health standard for mercury in surface water samples will be discussed with the laboratory prior to sampling. If it is reasonable to achieve this lower standard, a lower detection limit will be requested during analysis.
Barry L. Forsythe, Ph.D. U.S. Fish & Wildlife Service Liaison to USEPA Region VI Email September 29, 2009	I have reviewed the Patrick Bayou-Draft Sediment and Surface Water Sampling Plan. My only comment or question is related to the sampling location selection rationale. It appears that the bayou was sectioned (randomly?) and then one sample was chosen to be collected from the spatial center point of each section. When comparing those locations

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	with historical locations, some are pretty close. I'm not really thinking it will make a terrible difference, but some may comment or have concerns with this approach. A possible alternative would be to take a random sample location from within each section. But other than this issue, I see no reason to not move forward with the fieldwork. Response: A primary goal of the sediment sampling is to collect data that would provide a robust assessment of the temporal and spatial distribution of COPC in surface sediments (e.g. spatial interpolation and mapping). A grid of approximately 300-ft square was constructed and sample locations placed in the center of each grid to provide an unbiased sampling design. A secondary benefit would be to compare the current data to historical data in locations that are close to overlap (as noted in the comment) and would provide some indication of how concentrations may have changed from previous sampling efforts.
Jon Rauscher USEPA Region 6 Email September 29, 2009	Overall the sampling plan is well written. I did notice that field duplicate samples are proposed to be collected at a rate of 1 per 20 samples (5%) instead of the typical rate of 1 per 10 samples (10%). With 47 sediment sample locations proposed to be collected, 3 duplicate samples would be collected instead of 5 samples (rounding the # of samples up). With 6 surface water locations are proposed to be collected from 2 depth and 2 tidal events for a total of 12 samples per tidal event. Therefore, 1 duplicate sample would be collected during a surface water sampling event instead of 2 samples. Response: The Patrick Bayou Project QAPP indicates that field duplicates would be collected at a frequency of 5%. The current SAP is consistent with this requirement.